

USSN 09/742,485
Atty. Docket No. 2000-0087-05IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently amended) An excimer laser with long life electrodes said laser comprising:
- A) a laser chamber containing a laser gas comprising fluorine;
 - B) an electrode set comprising an elongated machined and annealed copper alloy cathode and an elongated machined and annealed copper alloy anode;
 - C) a circulating means for circulating said laser gas between said elongated electrode;
 - D) a pulse power electrical system for generating electrical pulses between said electrode to produce a laser gain medium.
- ~~wherein said cathode and anode are annealed after they are machined to reduce surface stress and to reduce exposed metallic grain boundary length of surfaces of said cathode and anode.~~
2. (Original) A laser as in claim 1 wherein said elongated anode is comprised of at least 70% copper and 7% aluminum.
3. (Original) A laser as in claim 2 wherein said elongated anode also is comprised of nickel and iron.
4. (Original) A laser as in claim 3 wherein said elongated anode is comprised of approximately 82% Cu, 10% Al, 5% Ni and 3% Fe.
5. (Original) A laser as in claim 1 wherein said elongated cathode is comprised of at least 50% copper and at least 25% zinc.
6. (Original) A laser as in claim 3 wherein said elongated cathode is comprised of at least 50% copper and at least 25% zinc.

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7. (Original) A laser as in claim 4 wherein said elongated cathode is comprised of at least about 70% copper and at least 25% zinc.

8. (Original) A laser as in claim 5 wherein said elongated cathode is also comprised of lead.

9. (Original) A laser as in claim 8 wherein said elongated cathode is comprised of approximately 61.5% copper, 35.5% zinc and 3% lead.

10. (Original) A laser as in claim 8 wherein said elongated cathode is comprised of approximately 70% copper, 29.93% zinc and 0.07% lead.

11. (Original) A laser as in claim 4 wherein said elongated cathode is comprised of approximately 70% copper, 29.93% zinc and 0.07% lead.

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16. (Cancelled)

17. (Cancelled)

Please add the following new claims:

18: (New) An excimer laser with long life electrodes said laser comprising:

A) a laser chamber containing a laser gas comprising fluorine;

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B) an electrode set comprising an elongated machined and annealed copper alloy cathode and an elongated machined and annealed copper alloy anode, each of which is annealed after machining in order to reduce surface stress and to reduce exposed metallic grain boundary length on surfaces of said cathode and anode;

C) a circulating means for circulating said laser gas between said elongated electrode;

D) a pulse power electrical system for generating electrical pulses between said electrode to produce a laser gain medium.

19. (New) The apparatus of claim 1 further comprising:

said anode and said cathode each being the product of a process comprising annealing said anode and said cathode at substantially above 600°C.

20. (New) The apparatus of claim 18 further comprising:

said anode and said cathode each being the product of a process comprising annealing said anode and said cathode at substantially above 600°C.

21. (New) The apparatus of claim 19 further comprising:

said anode and said cathode each being the product of a process comprising annealing said anode and said cathode at least 50°C below the softening point for the alloy respectively comprising the anode and the cathode.

22. (New) The apparatus of claim 19 further comprising:

said anode and said cathode each being the product of a process comprising annealing said anode and said cathode at least 50°C below the softening point for the alloy respectively comprising the anode and the cathode.
